

### **Abstract .**

The invention is a thin film composite solid (and a means for making such) suitable for use as an electrolyte, having a first layer of a dense, non-porous conductive material; a second layer of a porous ionic conductive material; and a third layer of a dense non-porous conductive material, wherein the second layer has a Coefficient of thermal expansion within 5% of the coefficient of thermal expansion of the first and third layers.